



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

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March 26, 1986

TO: Board of Oil, Gas and Mining
THRU: Lowell P. Braxton, Administrator
FROM: D. Wayne Hedberg, Permit Supervisor/Reclamation
Hydrologist *DWH*
RE: Kennecott, UCD Modernization Project - Phase I,
Grinding Plant & Access Road Site Grading Activities,
ACT/035/002 - I, Salt Lake County, Utah

Attached is an Executive Summary for a revision which Kennecott Minerals Company proposes for its Bingham Canyon Mining operations. The Utah Copper Division Modernization Project will be permitted in two (2) phases by the Division of Oil, Gas and Mining. Phase I activities will involve disturbance of approximately 163 acres in a previously undisturbed unpermitted area (some limited dry-land farming has occurred). A bond estimate for this area has been calculated. The bond for Phase I of the UCD Modernization Project has been submitted by Kennecott in the amount of \$86,860. This bond will be revised to include additional disturbances and reclamation costs associated with Phase II, once it is approved by the Division. The Division requests that the Board concur with the form and amount of surety for Phase I operations.

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EXECUTIVE SUMMARY - REVISION TO EXISTING PERMIT

Mine Name: Bingham Canyon Mine I. D. No.: ACT/035/002 - I
UCD Modernization Project - Phase I, Grinding Plant/Access Road Site Grading
Operator: Kennecott Minerals Company County: Salt Lake
P.O. Box 11248 New/Existing: Existing
Salt Lake City, Utah 84147 Mineral Ownership: Kennecott
Telephone: 801-332-8261 Surface Ownership: Kennecott
Contact Person: Mr. Robert A. Malone Lease No.(s): N/A
Life of Mine: Years Permit Term: 1 year (Phase I)
Legal Description: (of revision) Grinding Plt.-SW1/4 Section 5 and SE1/4 Section 6
, T3S, R2W, SLBM; Access Road - portions of Section 8 and Section 5, T3S, R2W, SLBM
Mineral(s) to be Mined: Copper/Molybdenum (no mining during Phase I site grading)
Mining Methods: Surface Mine
Acres to be Disturbed: 163 Acres - Phase I Modernization Activities
Present Land Use: Wildlife, agricultural and mining
Postmining Land Use: Native rangeland, wildlife, grazing
Variances from Reclamation Standards (Rule M-10) Granted: M-10(12) Soils

Soils and Geology:

Soil Description: Clay loam (surface soil, 0-12 inches), Clay to a clay loam
(subsurface soil, 12-60 inches)
pH: 6.2 (average of surface soil), 7.6 (average subsurface soil)
Special Handling Problems: Low erosion hazard, relatively flat topography
Geology Description: East flank, northern Oquirrh Mts. Grinding Plant underlain
by Harkers Alluvium (Pleistocene), further underlain by bedrock consisting of
laharic breccia (Bingham Sequence: Curry Peak, Freeman Peak, Kirkman-Diamond Frms)

Hydrology:

Ground Water Description: Principal aquifer occurs @500 feet below surface grind-
ing plant area. Local perched aquifer encountered in 1 or 56 bore holes @ 35 ft.
No freestanding groundwater in any of 13 backhoe test pits excavated on site.
Surface Water Description: Barney's Canyon is principal ephemeral drainage adja-
cent to grinding plant. Retention ponds proposed to handle surface runoff from
the Phase I operations area.
Water Monitoring Plan: None proposed for Phase I operations, site grading and
access road building activities.

Ecology:

Vegetation Type(s); Dominant Species: Abandoned dryland farming, sagebrush, oak
brush, various grasses and forbes
Percent Surrounding Vegetative Cover: 35% for area of Phase I activities
Wildlife Concerns: insignificant concerns associated with Phase I activities.
Surface Facilities: (revision area) Phase I permitting activities will involve
site grading and access road construction only. No surface facilities required.
Mining and Reclamation Plan Summary: see attached summary

Surety:

Amount: \$86,860 (for Phase I operations only)
Form: Bond
Renewable Term: 1 year (1987 dollars), to be revised upon Phase II approval
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ATTACHMENT

Mining and Reclamation Plan Summary
UCD Modernization Project - Phase I
Grinding Plant/Access Road Site Grading Activities

Kennecott Minerals Company, Utah Copper Division
Bingham Canyon Operations
ACT/035/002
Salt Lake County, Utah

March 26, 1986

During Operations:

1. "Phase I" permitting of the UCD Modernization Project involves construction of an access road to the proposed location for the new grinding/milling facility. Preliminary site grading and excavation work for foundations at the new grinding plant location will also be performed. The grinding plant will encompass 115 acres. The access road right-of-way encompasses 48 acres.

2. Approximately 14,000 cubic yards of topsoil will be stripped from portions of the plant site, temporarily stockpiled and protected from erosion. This soil will later be used for contemporaneous reclamation on the road embankments and exposed plant site outcrops upon completion of the proposed Phase II construction.

Following Operations:

1. Kennecott's intentions are to continue with "Phase II" permitting and construction. Should the company fail to complete "Phase II" permitting, the following reclamation plan will be implemented by Kennecott:

- (i) The disturbed areas will be stabilized and regraded to conform with the surrounding natural terrain. Compacted areas will be ripped to a depth of 12 inches (i.e., roads).
- (ii) The soil will be analyzed and supplemental amendments applied as necessary.
- (iii) Standard agronomic practices will be used to prepare the seedbed for drill and broadcast seeding. The disturbed site will be reclaimed with native vegetative species (reference Table 2, Contingency Reclamation Seed Mix, Phase I, March 13, 1986 Tentative Approval response).

TABLE 3

SITE RECLAMATION ESTIMATE FOR BOND ESTIMATE

Phase I

| <u>Item</u> | <u>Cost/Acre</u> | | <u>Cost</u> |
|--|------------------|------------|-------------|
| Final Site Preparation (Dozer) \$800/day x 1 day/20 acres | \$ 40.00 | X163 acres | \$ 6,520 |
| Seed Mix (drill) 19.0 PLS/acre x 15.84/PLS | \$301.00 | X155 acres | \$46,655 |
| See Mix (broadcast) 38.0 PLS/acre x 15.84/PLS | \$602.00 | X8 acres | \$ 4,816 |
| Fertilizer 250 pounds/acre x \$0.1152/pound | \$ 28.00 | X163 acres | \$ 4,694 |
| Mulch 2000 lbs/acre x \$50/ton | \$ 50.00 | X163 acres | \$ 8,150 |
| Equipment Rental (Tractor & Drill) \$300/day x 1 day/29 acres | \$ 15.00 | X155 acres | \$ 2,325 |
| Fuel | \$ 0.50 | X155 acres | \$ 78 |
| Equipment Service and Maintenance | \$ 1.90 | X155 acres | \$ 155 |
| General Manpower \$50/day x 1 day/20 acres | \$ 7.50 | X163 acres | \$ 1,223 |
| Equipment Operator, Dozer \$148.10/day x 8.15 day | | | \$ 1,207 |
| Equipment Operator, Tractor \$148.10/day x 5.34 days | | | \$ 791 |
| Broadcast Seeding Manpower \$22.80/hour x 4 hours | | | \$ 91 |
| Miscellaneous | \$ 6.13 | X163 acres | \$ 1,000 |
| Subtotal | | | \$77,705 |
| Contingency (10%) | | | \$ 7,771 |
| Total | | | \$85,487 |
| Escalation at 1.62% | | | \$86,860 |